Science Standards Review for the Washington State Board of Education

Presentation to the Board

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Innovations in Science Learning

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PROJECT TIMELINE/OVERVIEW

November December 2007	January 2008	February March 2008	April May 2008
1. Research and review relevant documents, establish criteria for benchmark selection, summarize preliminary findings. 2. 1st WA Panel Meeting. 3. Develop methodology and instruments to support expert review.	4. Submit preliminary report to SBE. 5. Facilitate expert review of Washington Science Standards.	5. Analyze/interpret results of expert review & prepare recommendations. 6. 2nd WA Panel Meeting. 7. Submit interim report to SBE.	8. Facilitate public input into the Science Standards Review. 9. 3rd WA Panel Meeting. 10. Submit final report to SBE. 11. 4th WA Panel Meeting. Note. A final WA Panel Meeting will be held following the OSPI revisions to the Standards.

TOP TEN STRENGHS

(1) Recognizes "all students."
(2) Initiated more in-depth look at curriculum and teaching.
(3) Helps users to understand science learning progression over time.
(4) Relative "mass" of EALR number 1 versus EALR numbers 2 and 3 is appropriate.
(4) K-10 focus results in science actually being taught in lower grades.
(4) Initiated cross-grade level discussions about science.
(5) There are only 3 EALRs and 42 GLEs (limited number is appropriate).
(6) Standards act as a catalyst for district-wide professional development and curriculum development.
(7) EALR #2 (process of science) is included and given importance.
(8) Standards have given rise to clarity on core science concepts.
(8) Lack of curricula/instructional specification is good.
(9) There is an even distribution of physical, earth, and life sciences in EALR #1.
(10) The level of content and grade-level distribution is based on NSES/research.
(10) Document provides examples for practitioners.

TOP TEN WEAKNESSES

(1) Lack of strong connection between standards and assessment.
(1) There is an implication that all content is covered in each grade.
(2) Grades 9-10 are extra challenging with too much too cover.
(3) Document lacks clarity on what component is the actual standard.
(3) Document suffers from being just a "book of lists," lacking narrative explanations.
(4) Not very usable document for teachers.
(5) Use of Bloom's Taxonomy - the verbs used are at the lower level of the taxonomy.
(5) GLEs don't describe detail necessary for implementation (curricula, instruction).
(6) Forces "too much" to be covered and not enough time to do it all.
(7) Vocabulary is not consistent with common practice in field.
(8) GLEs don't reflect personal student attributes, as referenced in the Preliminary Science College Readiness Definitions.
(9) No clear aim is stated in the document.
(9) Details are often misinterpreted when implemented.
(10) Document says it will be the basis for WASL but doesn't hold true.

SELECTION OF BENCHMARK STATES/NATIONS

Benchmark States:

California
Colorado
Massachusetts

Benchmark Nations:

Finland
Singapore

Criteria Used in Selection:

- New Economy Indicators
- Comparison studies of state standards reviews (Education Week, Fordham Institute, AFT)
- National & International Assessments (NAEP, TIMSS & PISA)

PREVIEW OF LIKELY AREAS FOR RECOMMENDED CHANGES

- Connections between the standards, curriculum, and assessment.
- Content of the standards in terms of grade-level appropriateness and emphasis.
- Amount of content and balance between standards that address understanding of scientific concepts, scientific skills related to inquiry, and the application of scientific concepts.
- Structure and usability of the document.
- Strategies for implementation of the standards.